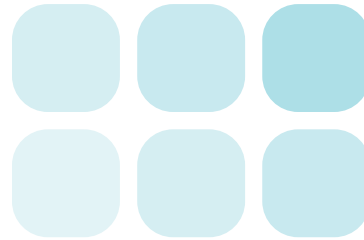


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Carlsbad Municipal Water District
5950 El Camino Real
Carlsbad, CA 92008
(760) 438-2722



2007 Water Quality Report



Carlsbad Municipal Water District

Este informe contiene informacion muy importante sobre su agua potable.
Traduzcalo o hable con alguien que lo entienda bien.



Quality



The Carlsbad Municipal Water District (CMWD) is providing this report to customers as an overview of how your potable water is delivered and how the City works to ensure that the highest quality is achieved.

This report also includes information about the quality of the water delivered to Carlsbad Municipal Water District customers in 2006.

Supply

Since there are currently no local sources of fresh drinking water, CMWD imports all of its water supply. This supply is treated by and purchased from the Metropolitan Water District (MWD) via our wholesaler, the San Diego County Water Authority (SDCWA).

MWD receives water from two sources: the Colorado River through the Colorado River Aqueduct, and Northern California through the California Aqueduct (also known as the State Water Project). These waters are blended and rigorously treated at MWD's Lake Skinner Treatment Plant in southern Riverside County. The water is then delivered to Carlsbad through the San Diego Aqueduct, owned by SDCWA.

During 2006, an average of 59% of our water came from the Colorado River, with the remaining 41% coming from the State Water Project. CMWD is partnering with Poseidon Resources on a desalination project that would provide 50 million gallons of drinking water to Carlsbad and the San Diego region. For more information and updates on the desalination project go to www.carlsbad-desal.com.

Safety

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline: (800) 426-4791.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Department of Health Services (Department) prescribe regulations that limit the amount of certain



contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Special Note:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline: (800) 426-4791.

Source Water Assessment

The Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies in December 2002. Colorado River supplies are considered to be most vulnerable to contamination from recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to contamination from urban/storm water runoff, wildlife, agriculture, recreation, and wastewater. A summary of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

How to Contact Us

This report covers testing for contaminants in 2006. For questions or concerns regarding the quality of Carlsbad's drinking water, contact Steven Plyler at the Carlsbad Municipal Water District: (760) 438-2722 or water@ci.carlsbad.ca.us.

To participate in decisions that affect drinking water in the CMWD service area, please watch the Carlsbad City Council agenda for drinking water items. Agendas can be obtained at Carlsbad City Hall, 1200 Carlsbad Village Drive, or at www.ci.carlsbad.ca.us. The City Council meets every Tuesday at 6:00 p.m. at City Hall. Comments regarding your drinking water are always welcome.

This report is mailed to all CMWD customers at their billing address and is available at most City facilities. This report may be photocopied and distributed or posted in a prominent place at your facility. Additional copies are available on the Internet at www.carlsbadca.gov.

The Carlsbad Municipal Water District

5950 El Camino Real

Hours: Monday through Friday, 8 am to 5 pm
(760) 438-2722 • water@ci.carlsbad.ca.us

Additional sources for water quality information:

San Diego County Water Authority

(858) 522-6600 • www.sdcwa.org

Metropolitan Water District of Southern California

(800) CALL-MWD (225-5693) • www.mwd.dst.ca.us

California Department of Health Services

Division of Drinking Water & Environmental Management
(619) 525-4159 • www.dhs.ca.gov/ps/ddwem

U.S. Environmental Protection Agency

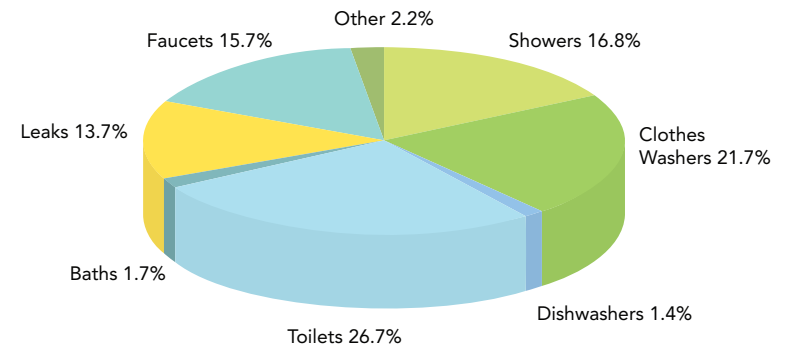
Office of Ground Water & Drinking Water
Safe Drinking Water Hotline: (800) 426-4791
www.epa.gov/safewater/dwhealth.html
www.epa.gov/safewater/faq/faq.html

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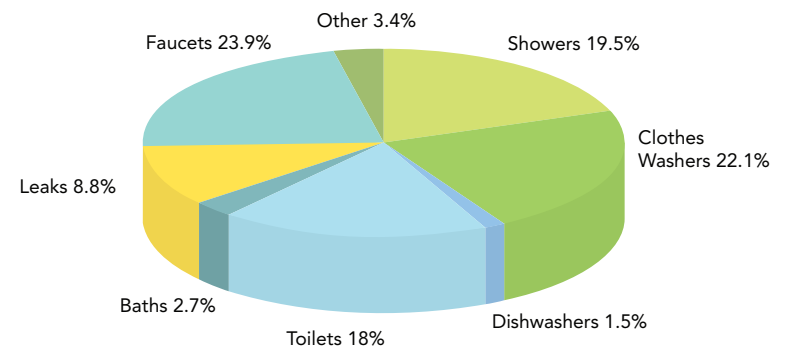


Daily Residential Water Use

Daily indoor per capita water use in the typical single family home is 69.3 gallons. Here is how it breaks down:



By installing more efficient water fixtures and regularly checking for leaks, households can reduce daily per capita water use by about 35% to about 45.2 gallons per day. Here's how it breaks down for households using conservation measures:



Source: *Handbook of Water Use and Conservation* by Amy Vickers

If all U.S. households installed water-saving features, water use would decrease by 30 percent, saving an estimated 5.4 billion gallons per day. This would result in dollar-volume savings of \$11.3 million per day or more than \$4 billion per year.



Conserve



Being located in a semi-arid climate means that Southern California is always dry – increasing the importance of conserving water. 2006 was an especially dry year throughout the Southwest United States, the San Diego region only received about 33% of its expected rainfall, compounding an already historic drought in the Colorado River.

Each year water agencies rely upon the water generated from the Colorado River and mountainous regions of Northern California. With dry years in source water areas comes limited supply – water that is shared across a growing population in Southern California. CMWD is committed to increased conservation measures in its business practices and providing education and information about water supply to its customers.

Residents and businesspeople are encouraged to stay informed of water supply issues and adopt water conservation measures at home and work. Saving water is easy to do and doesn't have to cost any money to a resident. Tips are available in several places:

www.carlsbadconserves.org

www.sdcwa.org

www.h2ouse.org

www.carlsbadca.gov/water

www.mwdh2o.com

www.bewaterwise.com

Clean Environment

Clean waterways not only provide recreational opportunities for us and habitat for animals and plants, but also add beauty to our natural landscape. Everyone benefits from clean water and everyone plays a role in keeping our creeks, lagoons, and ocean clean.

CMWD is committed to implementing conservation programs that reduce water demand and lessen our dependency on imported water supplies. These programs can assist residents to efficiently manage water consumption and are offered free of charge in conjunction with the District's water wholesale suppliers, the San Diego County Water Authority and the Metropolitan Water District.

Vouchers are also available and act like coupons for water saving household items. By getting a voucher before you make your purchase, you are guaranteed an immediate discount when you purchase from a participating supplier. Voucher supplies are limited, and are distributed on a first come, first served basis by calling (800) 986-4538. *You must be a Carlsbad Municipal Water District customer to receive vouchers.*

How to Read this Report

As you read the water quality tables in this report, compare the level of constituents found in CMWD's water in the "Skinner Plant Effluent" column with the standards set for them in the MCL and PHG columns. CMWD's water did not violate any drinking water standards in 2006.

The following are key terms to help you understand the standards we use to measure drinking water safety.

Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL)

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

Primary Drinking Water Standard (PDWS)

MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Treatment Technique

A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Abbreviations

AI	Aggressiveness Index
AL	California Action Level
CFU/mL	Colony Forming Units per Milliliter
DCPA	Dimethyl Tetrachloroterephthalate
DBP	Disinfection By-Products
DLR	Detection Limits for purposes of Reporting
HAA5	Haloacetic Acids (five)
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MFL	Million Fibers per Liter
MPN	Most Probable Number
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
N	Nitrogen
NA / ND	Not Applicable / None Detected
NL	Notification Level
NTU	Nephelometric Turbidity Units
P or A	Presence or Absence
pCi/L	picoCuries per liter
PHG	Public Health Goal
ppb	parts per billion or micrograms per liter (µg/L)
ppm	parts per million or milligrams per liter (mg/L)
ppq	parts per quadrillion or picograms per liter (pg/L)
ppt	parts per trillion or nanograms per liter (ng/L)
RAA	Running Annual Average
SI	Saturation Index (Langelier)
TOC	Total Organic Carbon
TON	Threshold Odor Number
TTHM	Total Trihalomethanes
TT	Treatment Technique
µmho/cm	micromho per centimeter

Water Quality Report to MWD Member Agencies
The Metropolitan Water District of Southern California

PARAMETER	UNITS	STATE OR FEDERAL MCL [MRDL]	PHG (MCLG) [MRDLG]	STATE DLR	SKINNER PLANTS		MAJOR SOURCES IN DRINKING WATER
					RANGE	AVERAGE	
Percent State Project Water	%	NA	NA	NA	41 - 59	51	
PRIMARY STANDARDS – Mandatory Health-Related Standards							
CLARITY							
Combined Filter Effluent Turbidity	NTU/ %	0.3/95 (a)	NA	NA	Highest 0.11	100% < 0.3	Soil runoff
MICROBIOLOGICAL							
Total Coliform Bacteria	%	5.0 (b)	(0)	NA	0%	0%	Naturally present in the environment
Fecal Coliform and E. coli	(c)	(c)	(0)	NA	Distribution System-wide Fecal Coliform-positive samples = 0		Human and animal fecal waste
					Distribution System-wide E.coli-positive samples = 0		
Heterotrophic Plate Count (HPC) (d)	CFU/mL	TT	NA	NA	TT	TT	Naturally present in the environment
Total Culturable Viruses (e)	P or A/1000 L	TT	(0)	NA	A	A	Human and animal fecal waste
ORGANIC CHEMICALS							
Semi-Volatile Organic Compounds							
Arylamide	NA	TT	(0)	NA	TT	TT	Water treatment chemical impurities
Epichlorohydrin	NA	TT	(0)	NA	TT	TT	Water treatment chemical impurities
INORGANIC CHEMICALS							
Copper (f, h) 36 sites triennial 2006	ppm	AL=1.3	0.17	0.05	0.145 - 0.651	0.464 = 90%ile	Internal corrosion of household pipes; natural deposits; erosion
Fluoride (naturally-occurring)	ppm	2.0	1	0.1	0.16 - 0.23	0.20	Erosion of natural deposits; water additives for tooth health
Nitrate (as N) (i)	ppm	10	10	0.4	ND - 0.45	ND	Runoff and leaching from fertilizer use; sewage; natural erosion
RADIOLOGICALS (j)							
Uranium	pCi/L	20	0.43	1.0	1.5	1.5	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCTS PRECURSORS (l)							
Total Trihalomethanes (TTHM) (l)	ppb	80	NA	0.5	41 - 69	53	By-product of drinking water chlorination
Total Trihalomethanes (TTHM) (l)	ppb	80	NA	0.5	12 - 73	Highest RAA 43	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (l,m)	ppb	60	NA	1	20 - 29	25	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (l,m)	ppb	40	NA	1	5 - 41	Highest RAA 18	By-product of drinking water chlorination
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	1.4 - 2.8	Highest RAA 2.4	Drinking water disinfectant added for treatment
Bromate (n)	ppb	10	(0)	5	NA	Highest RAA NA	By-product of drinking water ozonation
DBP Precursors Control (TOC) (l)	ppm	TT	NA	0.30	TT	TT	Various natural and man-made sources
SECONDARY STANDARDS – Aesthetic Standards							
Chloride	ppm	500	NA	NA	68 - 95	78	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	1 - 2	2	Naturally occurring organic materials
Corrosivity (o) (as Saturation Index)	SI	non-corrosive	NA	NA	0.17 - 0.45	0.28	Elemental balance in water, affected by temperature, other factors
Odor Threshold (p)	TON	3	NA	1	2	2	Naturally-occurring organic materials
Specific Conductance	µmho/cm	1600	NA	NA	650 - 880	748	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	118 - 184	154	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	381 - 518	438	Runoff/leaching from natural deposits; seawater influence
Turbidity (a)	NTU	5	NA	NA	0.05 - 0.08	0.06	Soil runoff
UNREGULATED CHEMICALS REQUIRING MONITORING							
Boron	ppb	NA	NA	100	100 - 160	140	Runoff/leaching from natural deposits; industrial wastes
Chromium VI (q)	ppb	NA	NA	1	0.04 - 0.12	0.08	Industrial waste discharge
ADDITIONAL PARAMETERS							
Alkalinity	ppm	NA	NA	NA	80 - 100	88	
Calcium	ppm	NA	NA	NA	40 - 55	47	
Chlorate (t)	ppb	NA	NA	20	25 - 41	52 - 104	By-product of drinking water chlorination; industrial processes
Corrosivity (u) (as Aggressiveness Index)	AI	NA	NA	NA	12.1 - 12.2	12.1	Elemental balance in water, affected by temperature, other factors
Hardness	ppm	NA	NA	NA	174 - 234	200	
Magnesium	ppm	NA	NA	NA	18 - 23.5	20	
N-Nitrosodimethylamine (v) (NDMA)	ppt	NA	3	2	ND	ND - 7.5	By-product of drinking water chlorination; industrial processes
pH	pH Units	NA	NA	NA	8.1 - 8.2	8.1	
Potassium	ppm	NA	NA	NA	3.5 - 4.3	3.7	
Sodium	ppm	NA	NA	NA	62 - 88	72	
TOC (w)	ppm	TT	NA	0.30	2.0 - 3.1	2.4	Various natural and man-made sources

Footnotes

- (a) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance. The monthly averages and ranges of turbidity shown in the Secondary Standards section were based on the plant effluents.
- (b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants. In 2006, 8,813 samples were analyzed. The MCL was not violated.
- (c) Fecal coliform/E.coli MCLs: The occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. The MCL was not violated in 2006.
- (d) HPC values were based on the monthly averages of the plant effluent samples. In 2006, all distribution samples collected had detectable total chlorine residuals and no HPC was required. Method detection limit is < 1 CFU/mL.
- (e) In 2006, the effluent from the five treatment plants had no detectable Cryptosporidium, Giardia, or Total Culturable Viruses. Two hundred liters of water were collected monthly for Cryptosporidium and Giardia analysis. One thousand liters of water were collected quarterly for Total Culturable Viruses analysis. Reported results ("P" for presence or "A" for absence) were taken from the first three quarters of 2006.
- (f) Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.
- (g) MTBE reporting level is 0.5 ppb.
- (h) Lead and copper are regulated as a Treatment Technique under the Lead and Copper Rule. It requires systems to take water samples at the consumers' tap. The action level, which triggers water systems into taking treatment steps if exceeded in more than 10% of the tap water samples, is 1.3 ppm for copper and 15 ppb for lead.
- (i) State MCL is 45 mg/L as nitrate, which equals 10 mg/L as N.
- (j) Metropolitan conducted four quarters of monitoring from August 2005 to April 2006. Reported results were taken from the first two quarters of 2006. Effective June 11, 2006, the gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.
- (k) Standard is for Radium-226 and -228 combined.
- (l) Average and range for the treatment plant effluent were taken from weekly samples for TTHM and monthly samples for HAA5. Distribution system-wide average and range were taken from 47 samples collected quarterly. In 2006, Metropolitan was in compliance with all provisions of the Stage 1 Disinfectants/Disinfection By-Products (D/DBP) Rule. The State of California has adopted the D/DBP Rule effective June 2006. TOC provides a medium for the formation of DBPs. Metropolitan was also in compliance with the DBP precursor (TOC) control portion of the Stage 1 D/DBP regulation.
- (m) DLR = 1.0 ppb for each HAA5 analyte (dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid) except for monochloroacetic acid which has a DLR = 2.0 ppb.
- (n) Running annual average was calculated from weekly samples. Bromate reporting level is 3 ppb.
- (o) SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Positive indices indicate the tendency to precipitate and/or deposit scale on pipes and are assumed to be non-corrosive. Negative indices indicate the tendency to dissolve calcium carbonate and are assumed to be corrosive. Effective September 2006, corrosivity is no longer part of the Secondary Standards for drinking water in the State of California.
- (p) Metropolitan has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information, contact MWD at (213) 217-6850.
- (q) Chromium VI reporting level is 0.03 ppb.
- (r) Both PHG (issued by the Office of Environmental Health Hazard Assessment) and NL (issued by CA Department of Health Services) were set at 6 ppb. Perchlorate reporting level is 2 ppb.
- (s) Data collected from January 2002 to January 2003. Minimum reporting levels are as stipulated in the Federal Unregulated Contaminants Monitoring Rule (UCMR). List 1 - Assessment Monitoring consists of 12 chemical contaminants for which standard analytical methods are available. List 2 - Screening Survey consists of 16 contaminants for which new analytical methods are used.
- (t) Ranges for the plant effluent and the distribution system were taken from two quarterly samples. Distribution system samples were taken from three locations.
- (u) AI measures the aggressiveness of water transported through pipes. Water with AI <10.0 is highly aggressive and would be very corrosive to almost all materials found in a typical water system. AI > 12.0 indicates non-aggressive water. AI between 10.0 and 11.9 indicates moderately aggressive water.
- (v) Ranges for the plant effluent were taken from quarterly samples. The distribution system-wide range was taken from 19 samples collected quarterly. The PHG was established at 3 ppt in December 2006. The California NL is 10 ppt.
- (w) Average and range for TOC were taken from weekly samples collected at the combined filter effluent.

